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Sample mappings to the Integration Model

WG10 Data Architecture Workshop
Palm Springs CA, September 1999

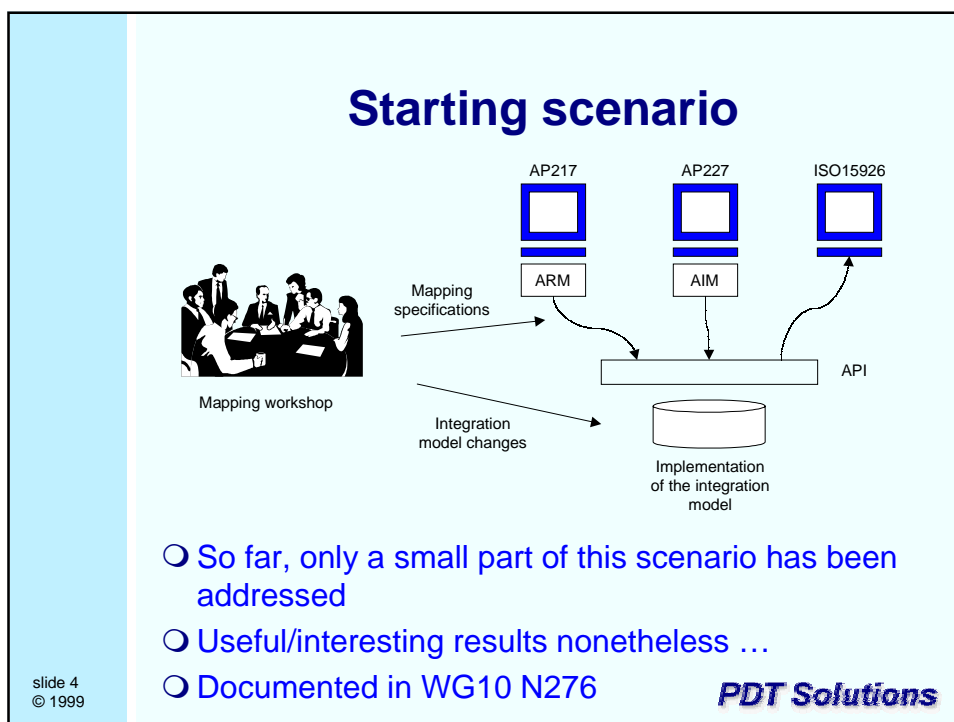
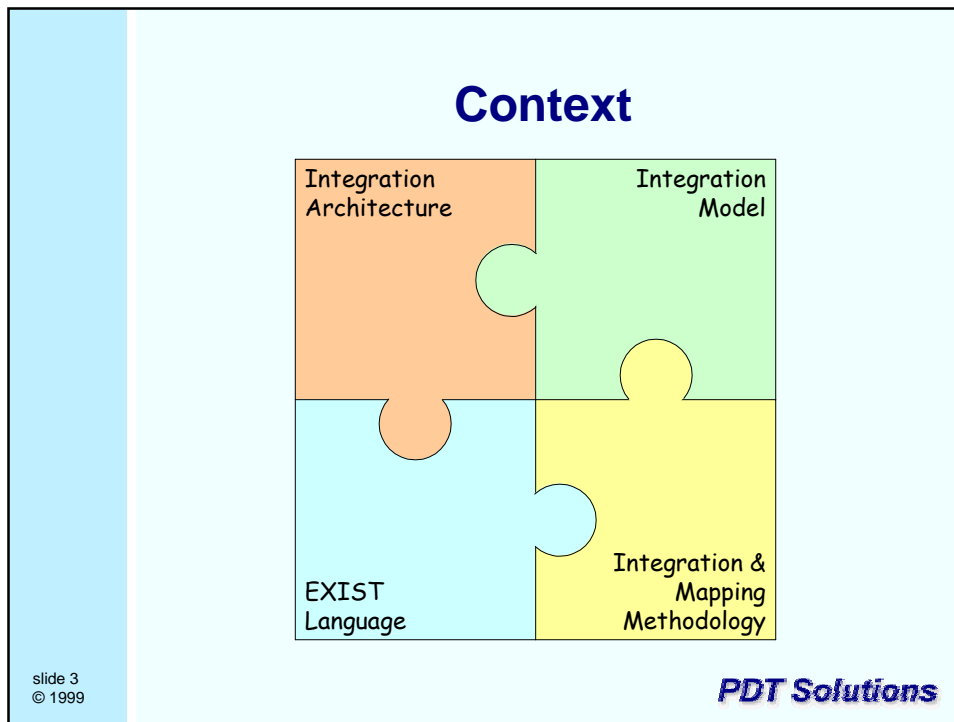
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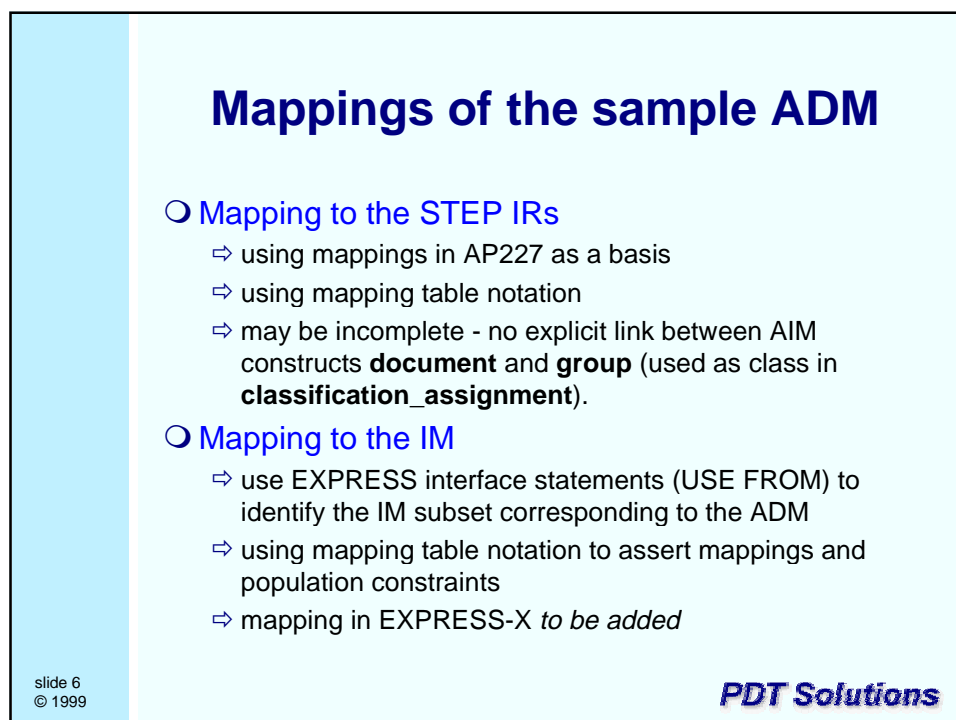
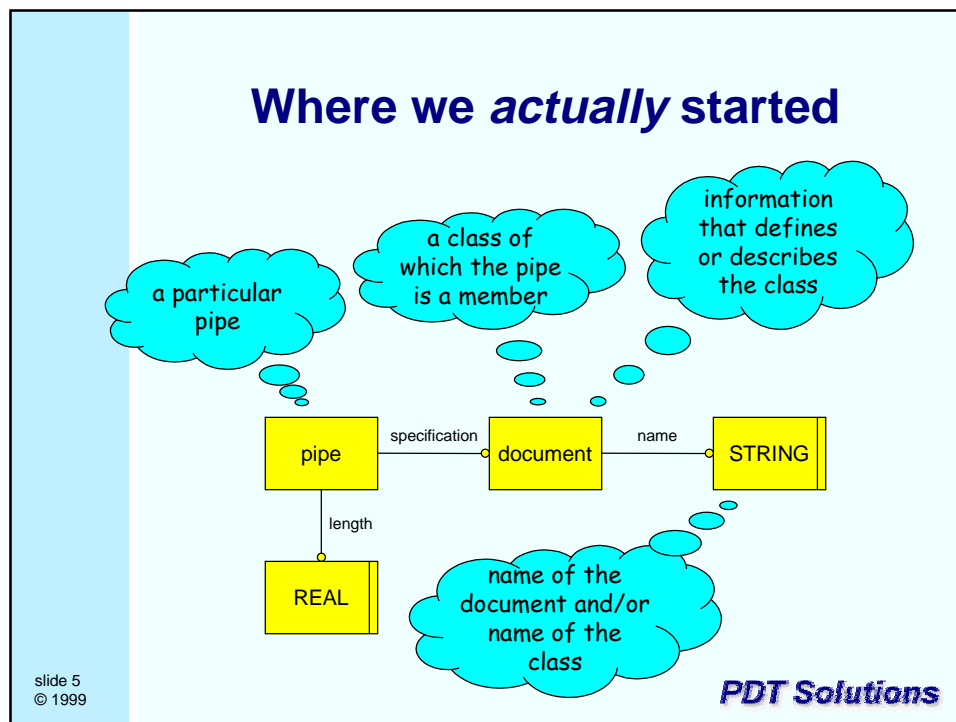
Background

- Experimental mapping activity conducted since the Lillehammer meeting
 - ⇒ Matthew West, Julian Fowler, Chris Angus
- Initial goals
 - ⇒ demonstrate the application of the Data Integration Architecture
 - ⇒ pros and cons of different mapping representations
 - ⇒ illustrate the use of the EXIST language to represent models *and* mappings between them
 - ⇒ identify issues to be discussed at the Palm Springs workshop
 - ⇒ contribute to the development of the Integration and Mapping Methodology component of the architecture

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IM changes and additions

- Multiple variants on the IM (in EXPRESS)
 - ⇒ WG10 N220
 - ⇒ PDT Days '99 paper
 - ⇒ EPISTLE Core Model v3.0 (ISO/CD 15926-2)
- Issues:
 - ⇒ Variations in some of the modelling paradigms/principles
 - ⇒ e.g., timeless links in N220/PDT Days vs Associations in EPISTLE v3.0
 - ⇒ Clarity of definitions
 - ⇒ Intended usage - some confusion amongst model authors?
- Revised IM in EXPRESS (will be WG10 N277)
 - ⇒ see EXPRESS-G diagrams

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Using EXIST

- See Matthew's slides



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EXpression of IInformation based on SSet theory

An Example Mapping

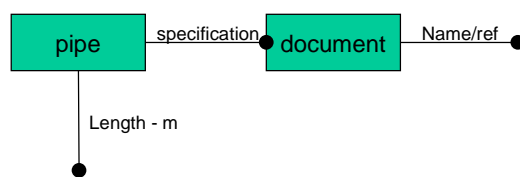
Matthew West - Shell Services International

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Express-G Model

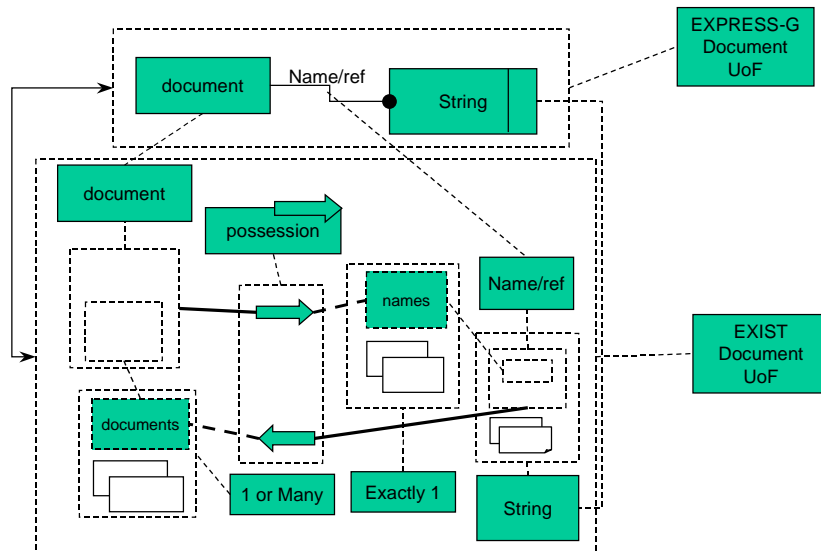


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EXIST Model - Document

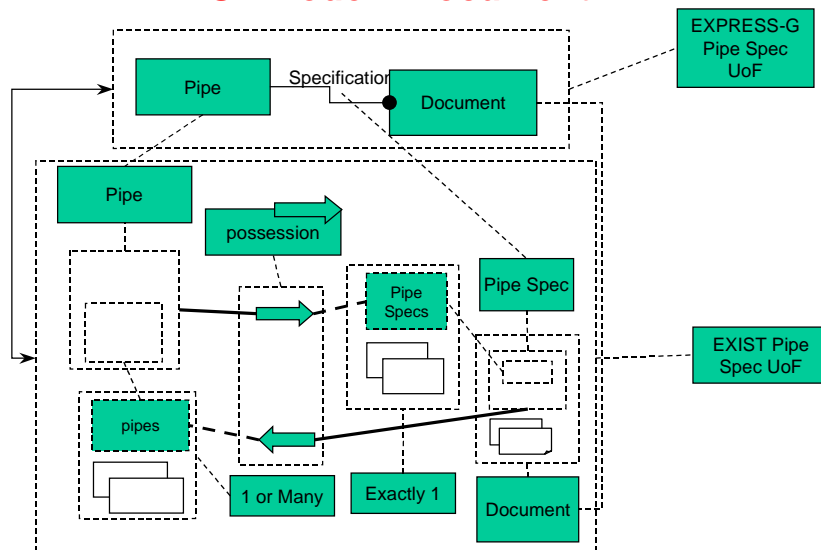


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EXIST Model - Document



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Interim conclusions

- Mapping is fundamental to the whole architecture
- There are close analogies to the STEP interpretation process
 - ⇒ analysis approach is similar
 - ⇒ “target” model is different (integration model vs integrated resources) ...
 - ⇒ requirements to represent mappings are very similar - experiment demonstrates that for an IM that is defined in EXPRESS, the STEP mapping table notation can be used
- Also analogies to the STEP integration process
 - ⇒ extension to meet unsatisfied requirements
 - ⇒ STEP AIM/MT specializations → IM (often as reference data)

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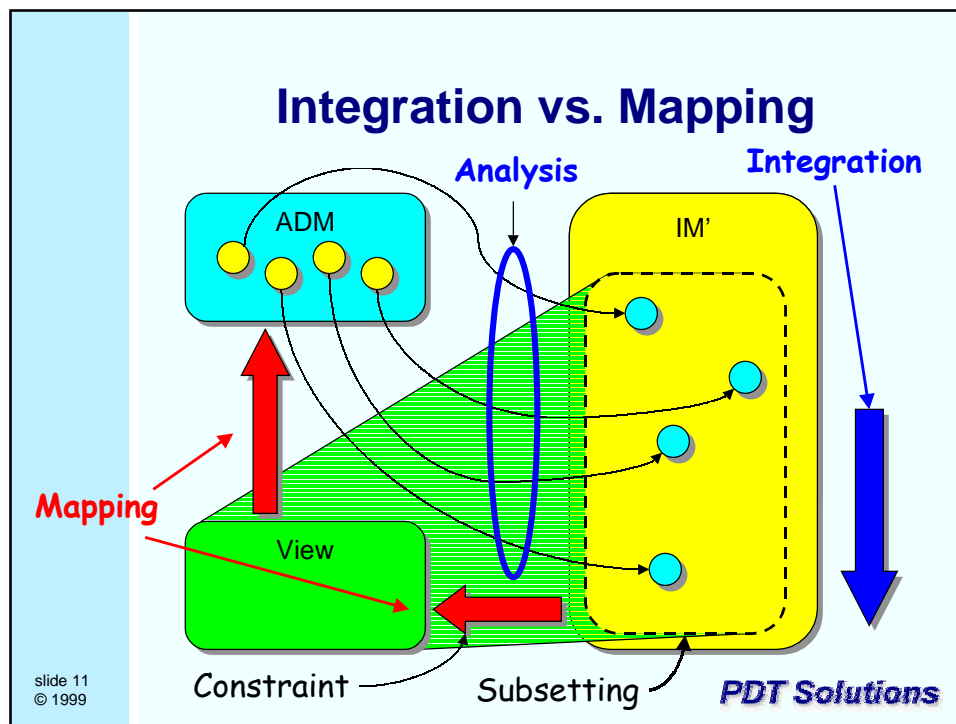
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Interim conclusions (continued)

- EXIST can be used to represent source model, target model and mapping in a single specification
 - ⇒ compact notation
 - ⇒ not easy to understand!
- Results of this experiment to be reflected in revision to the EXPRESS Integration Model
 - ⇒ N277, superceding N220
 - ⇒ less “experimental” - not limited to demonstration use
 - ⇒ working draft to accompany NWI proposal post-New Orleans?
- Update to methodology document (N255)
 - ⇒ to be distributed before New Orleans

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Issues

- Mapping APs into the IM needs to be done either at the level of the ARM, or ARM+AIM
 - ⇒ AIM alone is insufficient
- Stages described in Architecture Overview document do not match what was needed in this experiment
 - ⇒ no interim model created with the structure of the ADM and the terminology of the IM
- Clarification of IM semantics
- Deterministic rules for IM extension by subtyping vs reference data

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Next steps

- Revision to the EXPRESS representation of the Integration Model
 - ⇒ for New Orleans
 - ⇒ working draft to support NWI proposal?
- Revision to the Methodology document
 - ⇒ for New Orleans
 - ⇒ working draft to support NWI proposal?
- Continuation of the mapping experiment
 - ⇒ more complex ADM(s)
 - ⇒ use of EXPRESS-X
 - ⇒ use of reference data
 - ⇒ ...

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